General

Title

Long-stay nursing home care: percent of residents who have/had a catheter inserted and left in their bladder.

Source(s)

RTI International. MDS 3.0 quality measures user's manual, v9.0. Baltimore (MD): Centers for Medicare & Medicaid Services (CMS); 2015 Oct 1. 80 p.

Measure Domain

Primary Measure Domain

Clinical Quality Measures: Process

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess the percent of long-stay residents who have/had an indwelling catheter in the last 7 days.

Rationale

At any given time, more than 100,000 residents in American nursing facilities have urethral catheters in place (Nursing Home Quality Initiative, 2004). Catheters are commonly used for urinary retention, wound management, and in some circumstances, patient comfort. When not properly maintained and monitored, indwelling catheters can cause chronic pain or infections leading to a greater functional decline and decreased quality of life for the resident (Centers for Medicare and Medicaid Services [CMS], 2002) A thorough assessment of the resident and evaluation of the medical need for the catheter can sometimes decrease or prevent the use of catheters.

The indwelling catheter quality measure can potentially serve as a reminder to facilities of the importance

of limiting catheter use (Brega et al., 2007). Overuse of catheters to manage incontinence, other than for short-term periods, is a potential sign of suboptimal care and an indication that further assessment and alternative treatment could be offered (Georgiou et al., 2001). Among nursing facility residents, there is evidence that institutional policies and educational programs strongly impact care provider practices.

There are clear benefits to nursing homes conducting a thorough evaluation of the medical need for the catheterization of their residents. A determination regarding continued use or removal should be completed as soon as possible following admission. Nursing facilities need to assess the frequency of urinary catheterization practices to ensure that policies reflect current practice standards, and increase compliance with Centers for Disease Control guidelines for prevention of infection related to catheter use (Nursing Home Quality Initiative, 2004).

Using Minimum Data Set (MDS) 2.0 data for April to June 2008, the national prevalence of indwelling catheters in nursing facilities was 7.7%, with a range from an average of 5.2% in Rhode Island to a high of an average of 11.3% in North Dakota (CMS, n.d.) National measure results have been stable over time, ranging from 5.7% in 2003 to 5.8% in 2008 (American Health Care Association [AHCA], 2009). The current indwelling catheter quality measure is currently one of the 19 publicly reported quality measures for nursing facilities on the CMS Nursing Home Compare Web site.

Facilities can use information from this measure to determine whether they may be overusing catheters for their long stay residents. Reduced use of urinary catheters, and associated problems with catheter use including pain, infections and functional decline, are the expected benefits envisioned by use of this measure.

Evidence for Rationale

American Health Care Association (AHCA). Trends in publicly reported nursing facility quality measures. Washington (DC): American Health Care Association (AHCA); 2009 Jul.

Brega A, Hittle D, Goodrich G, Kramer A, Conway K, Levy C. Empirical review of publicly reported nursing home quality measures. Denver (CO): Division of Health Care Policy and Research University of Colorado at Denver; Abt Associates, Inc.; 2007.

Centers for Medicare & Medicaid Services (CMS). Quality Measures Management Information System (QMIS). Measure details: measure 10176. [internet]. Iowa Foundation for Medical Care; 2002

Centers for Medicare and Medicaid Services (CMS). CMS MDS quality measure/indicator report. [internet]. Baltimore (MD): Centers for Medicare & Medicaid Services (CMS);

Georgiou A, Potter J, Brocklehurst JC, Lowe D, Pearson M. Measuring the quality of urinary continence care in long-term care facilities: an analysis of outcome indicators. Age Ageing. 2001 Jan;30(1):63-6. PubMed

National Quality Forum measure information: percent of residents who have/had a catheter inserted and left in their bladder (long stay). Washington (DC): National Quality Forum (NQF); 2016 Jan 13. 13 p.

Nursing home quality initiative. Fast facts: urinary catheters overview. Baltimore (MD): U.S. Department of Health and Human Services, Centers for Medicare & Medicaid Services (CMS); 2004 Jan.

Primary Health Components

Nursing home; long-stay; bladder control; indwelling catheter

Denominator Description

All long-stay residents with a selected target assessment, except those with exclusions (see the related "Denominator Inclusions/Exclusions" field)

Numerator Description

Long-stay residents with a selected target assessment that indicates the use of indwelling catheters (see the related "Numerator Inclusions/Exclusions" field)

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A clinical practice guideline or other peer-reviewed synthesis of the clinical research evidence

A formal consensus procedure, involving experts in relevant clinical, methodological, public health and organizational sciences

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

- Indwelling urinary catheterization can frequently cause bacteremia, or in many cases, urinary tract infections, in the elderly. Catheterization causes bacteremia to occur at a rate of 3 to 10 percent of patients per day; a single in and out catheterization may cause bacteremia in as many as 20 percent of patients (Kamel, 2004). At least 40% of all infections seen in the nursing homes are in the urinary tract system; of those infections, 80% are due to urinary tract catheterization and instrumentation (Newman, Fader, & Bliss, 2004).
- In a study to measure the quality of urinary continence care in long-term care facilities, catheterization rates were approximately 10% in nursing facilities, ranging from 0% to 44% among fourteen nursing homes where data was collected on the outcome measure (Georgiou et al., 2001). Thus, there was great variability in this quality measure within settings. The authors were cautious to note that interpretation of the outcome results required more precise details on case-mix and the definition of outcome measures. In another study looking at state variation in indicators of quality of care in nursing facilities, limited variation among states was observed for urinary catheterization. However, among the risk-adjusted quality scores, the authors observed the most variation for urinary catheterization (an approximately twofold difference) (Castle, Degenholtz, & Engberg, 2005).
- Racial segregation between nursing facilities has been shown to be a major factor in racial disparities in the nursing facility population, primarily for African Americans. In 2000, a study drawing on national Minimum Data Set (MDS) and Online Survey, Certification, and Reporting (OSCAR) data found that two-thirds of all black residents were living in just 10% of all facilities (Smith et al., 2007). A 2002 survey of a stratified sample of 39 nursing facilities and 181 residential care/assisted living facilities in four states had similar findings (Howard et al, 2002). Facilities serving African Americans have demonstrated a lower level of quality care than those serving whites with lower staff to resident ratios and higher deficiency ratings (Grabowski, 2004). Minority groups in general and African Americans in particular have also had more limited access to nursing facility care than whites (National Center for Health Statistics [NCHS], Centers for Disease Control and Prevention [CDC], 1997)

Evidence for Additional Information Supporting Need for the Measure

Castle NG, Degenholtz H, Engberg J. State variability in indicators of quality of care in nursing facilities. J Gerontol A Biol Sci Med Sci. 2005 Sep;60(9):1173-9. PubMed

Georgiou A, Potter J, Brocklehurst JC, Lowe D, Pearson M. Measuring the quality of urinary continence care in long-term care facilities: an analysis of outcome indicators. Age Ageing. 2001 Jan;30(1):63-6. PubMed

Grabowski DC. The admission of blacks to high-deficiency nursing homes. Med Care. 2004 May;42(5):456-64. PubMed

Howard DL, Sloane PD, Zimmerman S, Eckert JK, Walsh JF, Buie VC, Taylor PJ, Koch GG. Distribution of African Americans in residential care/assisted living and nursing homes: more evidence of racial disparity. Am J Public Health. 2002 Aug;92(8):1272-7. PubMed

Kamel HK. Managing urinary tract infections in the nursing home: myths, mysteries and realities. Int J Geriatr Gerontol. 2004;1(2)

National Center for Health Statistics (NCHS), Centers for Disease Control and Prevention (CDC). Health, United States 1996-97 and injury chartbook. Atlanta (GA): Centers for Disease Control and Prevention (CDC); 1997. 341 p.

National Quality Forum measure information: percent of residents who have/had a catheter inserted and left in their bladder (long stay). Washington (DC): National Quality Forum (NQF); 2016 Jan 13. 13 p.

Newman DK, Fader M, Bliss DZ. Managing incontinence using technology, devices, and products: directions for research. Nurs Res. 2004 Nov-Dec;53(6 Suppl):S42-8. [51 references] PubMed

Smith DB, Feng Z, Fennell ML, Zinn JS, Mor V. Separate and unequal: racial segregation and disparities in quality across U.S. nursing homes. Health Aff (Millwood). 2007 Sep-Oct;26(5):1448-58. PubMed

Extent of Measure Testing

A joint RAND/Harvard team engaged in a deliberate iterative process to incorporate provider and consumer input, expert consultation, scientific advances in clinical knowledge about screening and assessment, Centers for Medicare & Medicaid Services (CMS) experience, and intensive item development and testing by a national Veteran's Health Administration (VHA) consortium. This process allowed the final national testing of Minimum Data Set (MDS) 3.0 to include well-developed and tested items.

The national validation and evaluation of the MDS 3.0 included 71 community nursing homes (NHs) (3,822 residents) and 19 VHA NHs (764 residents), regionally distributed throughout the United States. The evaluation was designed to test and analyze inter-rater agreement (reliability) between gold-standard (research) nurses and between facility and gold-standard nurses, validity of key sections, response rates for interview items, anonymous feedback on changes from participating nurses, and time to complete the MDS assessment.

Analysis of the test results showed that MDS 3.0 items had either excellent or very good reliability even when comparing research nurse to facility-nurse assessment. In most instances these were higher than those seen in the past with MDS 2.0. In addition, for the cognitive, mood and behavior items, national testing included collection of independent criterion or gold-standard measures. These MDS 3.0 sections were more highly matched to criterion measures than were MDS 2.0 items.

Improvements incorporated in MDS 3.0 produced a more efficient assessment: better quality information was obtained in less time. Such gains should improve identification of resident needs and enhance resident-focused care planning. In addition, including items recognized in other care settings is likely to enhance communication among providers. These significant gains reflect the cumulative effect of changes across the tool, including use of more valid items, direct inclusion of resident reports, improved clarity of retained items, deletion of poorly performing items, form redesign, and briefer assessment periods for clinical items.

Refer to *Development & Validation of a Revised Nursing Home Assessment Tool: MDS 3.0.* for additional information.

Evidence for Extent of Measure Testing

Saliba D, Buchanan J. Development & validation of a revised nursing home assessment tool: MDS 3.0. Baltimore (MD): Quality Measurement and Health Assessment Group, Office of Clinical Standards and Quality, Centers for Medicare & Medicaid Services; 2008 Apr. 263 p.

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Skilled Nursing Facilities/Nursing Homes

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Single Health Care Delivery or Public Health Organizations

Statement of Acceptable Minimum Sample Size

Specified

Target Population Age

All ages

Target Population Gender

Either male or female

National Strategy for Quality Improvement in Health Care

National Quality Strategy Aim

Better Care

National Quality Strategy Priority

Prevention and Treatment of Leading Causes of Mortality

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Living with Illness

IOM Domain

Effectiveness

Data Collection for the Measure

Case Finding Period

Quarterly

Denominator Sampling Frame

Patients associated with provider

Denominator (Index) Event or Characteristic

Diagnostic Evaluation

Institutionalization

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions
All long-stay* residents with a selected target assessment, except those with exclusions

*Long-stay: An episode with cumulative days in facility (CDIF) greater than or equal to 101 days as of the end of the target period.

Exclusions

- Target assessment is an admission assessment *or* a prospective payment system (PPS) 5-day or readmission/return assessment
- Target assessment indicates that indwelling catheter status is missing
- Target assessment indicates neurogenic bladder *or* neurogenic bladder status is missing
- Target assessment indicates obstructive uropathy *or* obstructive uropathy status is missing

Note: Refer to the original measure documentation for details.

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions
Long-stay residents with a selected target assessment that indicates the use of indwelling catheters

Note: Refer to the original measure documentation for details.

Exclusions
Unspecified

Numerator Search Strategy

Institutionalization

Data Source

Administrative clinical data

Type of Health State

Does not apply to this measure

Instruments Used and/or Associated with the Measure

Center for Medicare & Medicaid Services (CMS) Minimum Data Set (MDS) - Resident Assessment Instrument (Version 3.0)

Computation of the Measure

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Rate/Proportion

Interpretation of Score

Desired value is a lower score

Allowance for Patient or Population Factors

not defined yet

Description of Allowance for Patient or Population Factors

Risk adjustment refines raw quality measures (QM) scores to better reflect the prevalence of problems that facilities should be able to address. Two complementary approaches to risk adjustment are applied to the QMs.

One approach involves exclusion of residents whose outcomes are not under nursing facility control (e.g., outcome is evidenced on admission to the facility) or the outcome may be unavoidable (e.g., the resident has end-stage disease or is comatose). All of the QMs, except the vaccination QMs, are shaped by one or more exclusions. For each QM, the prevalence of the outcome across all residents in a nursing facility, after exclusions, is the *facility-level observed QM score*.

A second approach involves adjusting QM scores directly, using logistic regression. This method of adjustment employs *resident-level covariates* that are found to increase the risks of an outcome. Detailed specifications for resident-level covariates are presented in the Quality Measure Logical Specifications section of the *MDS 3.0 Quality Measures User's Manual*.

Resident-level limited covariate risk adjustment for residents who have:

- Frequent bowel incontinence on prior assessment (H0400 = [2 or 3])
  - Covariate = [1] if H0400 = [2, 3]
  - Covariate = [0] if H0400 = [0, 1, 9, -]
- Pressure ulcers at stages I, II, III, or IV on prior assessment:
  - Covariate = [1] if any of the following are true:
    - M0300B1 = [1, 2, 3, 5, 6, 7, 8, 9], *or*
    - M0300C1 = [1, 2, 3, 5, 6, 7, 8, 9], *or*
    - M0300D1 = [1, 2, 3, 5, 6, 7, 8, 9], *or*
  - Covariate = [0] if the following is true:
    - M0300B1 = [0, -, ^] *and*
    - M0300C1 = [0, -, ^] *and*
    - M0300D1 = [0, -, ^]
- All covariates are missing if no prior assessment is available

Standard of Comparison

not defined yet

Identifying Information

Original Title

Percent of residents who have/had a catheter inserted and left in their bladder (long-stay).

Measure Collection Name

Nursing Home Quality Initiative Measures

Measure Set Name

Long-stay Quality Measures

Submitter

Centers for Medicare & Medicaid Services - Federal Government Agency [U.S.]

Developer

Centers for Medicare & Medicaid Services - Federal Government Agency [U.S.]

RTI International - Nonprofit Research Organization

Funding Source(s)

United States (U.S.) Government

Composition of the Group that Developed the Measure

United States (U.S.) Government Staff, Clinical Experts, Researchers, and Statisticians

Financial Disclosures/Other Potential Conflicts of Interest

No conflicts of interest exist.

Endorser

National Quality Forum - None

NQF Number

not defined yet

Date of Endorsement

2016 Apr 4

Measure Initiative(s)

Nursing Home Compare

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2015 Oct

Measure Maintenance

Annual and (every three years) endorsement

Date of Next Anticipated Revision

Quarter 4 2016

Measure Status

This is the current release of the measure.

This measure updates a previous version: RTI International. MDS 3.0 quality measures user's manual. v8.0. Baltimore (MD): Center for Medicare & Medicaid Services (CMS); 2013 Apr 15. 80 p.

Measure Availability

Source available from the Centers for Medicare & Medicaid Services (CMS) Web site .

For more information, refer to the CMS Web site at www.cms.gov .

Companion Documents

The following are available:

Saliba D, Buchanan J. Development & validation of a revised nursing home assessment tool: MDS 3.0. Baltimore (MD): Quality Measurement and Health Assessment Group, Office of Clinical Standards and Quality, Centers for Medicare & Medicaid Services; 2008 Apr. 263 p. Available from the Centers for Medicare & Medicaid Services (CMS) Web site .

Nursing Home Compare. [internet]. Baltimore (MD): Centers for Medicare & Medicaid Services (CMS). 2000- [updated 2012 Nov 15]; [cited 2012 Nov 27]. This tool is available from the Medicare Web site .

NQMC Status

The NQMC summary was completed by ECRI on July 22, 2004. The information was verified by the measure developer on August 30, 2004.

This NQMC summary was updated by ECRI on November 28, 2005. The information was verified by the measure developer on February 8, 2006 and again on October 17, 2007.

This NQMC summary was retrofitted into the new template on June 28, 2011.

This NQMC summary was updated by ECRI Institute on August 15, 2013. The information was verified by the measure developer on December 3, 2013.

This NQMC summary was updated again by ECRI Institute on May 31, 2016. The information was not verified by the measure developer.

Copyright Statement

Production

Source(s)

RTI International. MDS 3.0 quality measures user's manual, v9.0. Baltimore (MD): Centers for Medicare & Medicaid Services (CMS); 2015 Oct 1. 80 p.

Disclaimer

NQMC Disclaimer

The National Quality Measures Clearinghouseâ„¢ (NQMC) does not develop, produce, approve, or endorse the measures represented on this site.

All measures summarized by NQMC and hosted on our site are produced under the auspices of medical specialty societies, relevant professional associations, public and private organizations, other government agencies, health care organizations or plans, individuals, and similar entities.

Measures represented on the NQMC Web site are submitted by measure developers, and are screened solely to determine that they meet the NQMC Inclusion Criteria.

NQMC, AHRQ, and its contractor ECRI Institute make no warranties concerning the content or its reliability and/or validity of the quality measures and related materials represented on this site. Moreover, the views and opinions of developers or authors of measures represented on this site do not necessarily state or reflect those of NQMC, AHRQ, or its contractor, ECRI Institute, and inclusion or hosting of measures in NQMC may not be used for advertising or commercial endorsement purposes.

Readers with questions regarding measure content are directed to contact the measure developer.